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There are, of course, many modifications by race, sex, custom, age, and especially disease. The mimesis of attention in the blind is more fugitive, partial and less energetic than in normal people, and the contraction is often limited to a single group of muscles. The facial movements of the blind when reading aloud by touch are usually motor accompaniments of the oral expression and are weaker when they do not read aloud and vanish in inner attention, *e.g.*, arithmetic. All blind persons, when attentive, are more or less motionless, at least in head and face. In many, spontaneous attention causes tension of the muscles in the back of the neck which become stiff. The difference between those born blind and those who become blind later is that in the former the contraction of the muscles of the forehead and the orbicularis palpebrarum in commando exercises is very difficult, and those of the superciliary muscles are impossible, but by those blinded late in life the isolated contraction of the frontalis and obicularis is still possible, though it be often weak and sometimes that of the superciliary muscles may be possible even by itself alone. In anger and pain, all blind persons contract their tension muscles, but less than do normal persons.

The intellectual expression of thought, then, by adults is chiefly in the mimic eye zone and in its three dermal muscles. The latter have manifold phylogenetic and ontogenetic functions besides the expression of thought, but the superciliary is most set apart for this latter purpose. Duchenne thought that the frontalis was for attention, the orbicularis and the superciliary muscles for reflection. Most essential are the superciliary muscles which are completely expressive, though not exclusively devoted to attention. They are developed in animals and children to protect from light and are tense in heat, short-sightedness, anger, sadness, etc. Thus the original purpose of the ciliary muscle is to protect the eye. The superciliary muscle, therefore, has three functions. Its highest may be alone and independent of the other functions and other muscles. It makes the vertical furrows on the forehead. Charles Bell thought animals lacked it. How could its pain function be transmuted into thought. Darwin connected it with the child's cry, frowning being its last trace. It narrows and sharpens the field of vision according to his principle of the association of purposive habits. This resembles Wundt's or Piederit's association of analogous adjustment of sensations. "The muscular movements of expression relate to imaginary sense expressions." Thinking always causes effort, if not pain. It is the expression of the psychic. Thus the pessimist has some basis, if thought is pain. Thus to adjust the eye to light in the child is the basis of thought expression in the adult. Sensorial optical attention is its genetic foreshadowing. Some psychologists think attention is always moving; others that it is fixed, but both theories are needed. In even the best of us, attention and thought are not entirely free from emotion. Thus movement and inhibition act and react upon each other, but while there must be tension there must also be rest and silence. In thought, respiration and vasomotor activities diminish; the muscles are a little relaxed; the pupils widen; blood pressure changes. In general, mental work is thus very different from physical.

*Physiology of the Nervous System*, by J. P. MORAT. Authorized English edition translated and edited by H. W. Syers. 263 illustrations. W. T. Keener & Co., Chicago, 1906. pp. 680.

This great work is a part of the more comprehensive treatise on physiology by Morat and Doyon. The author premises that it is the nervous system which decides at what moment the energy accumulated by the living being shall be liberated, that is, shall leave matter

and exert its motor functions. This point it decides with the aid of the senses and by often a lengthy inner elaboration. The cycle of nervous current implies impression from without, sensation within, and motor response, and lastly changed impressions due to movement. In the nervous system all movement induces sensation and all sensation induces movement. It has a marvellous attribute of adjourning its events until the appropriate moment. From the fact of the introduction of sensation into the cycle, events assume a peculiar meaning. The tonality is either pleasurable or painful, the former always preferred to the latter. Sensation seems to modify the relation between cause and effect. External events are preserved by being reduced to representation. It is a false impression that the end and aim of an act is its cause, for the latter must precede and not follow the former. Thus physiology gives rise to psychological problems which are out of its domain. The author first treats of sensibility in its relations to energy, determinism, organization, excitability and reaction; he then distinguishes between static and dynamic unity, and the first chapter starts with an account of the static condition of the neurons, including their dynamism, individuality, forms, functions, degeneration and stimulation; then the energies of the nerve with the current of repose, action and negative variation, fatigue, electrotonus, laws of contraction and nerve poisons, are discussed. Under organization the author treats sensibility and movement in their relations, beginning with nerve pairs, and then discussing spinal nerves and metamericism, cranial or sensory nerves, their inter-relations; then the glossopharyngeal, pneumogastric and the hypoglossal. In the next chapter the indication of impulses and the reflex act, together with inhibition, conservation of stimuli, etc., are discussed. Then come consciousness and unconsciousness, animal and organic life, cerebralization of the stimulus, respiration, circulation, secretion. The next chapter treats of orientation, equilibrium, the emotions, intelligence in its relation to the brain, localization, etc. Then come specific innervations, tactile, visual, auditory, olfactory and gustatory, and lastly language and its defects, idealization, association and sleep. Altogether it is a book of very great importance, is well up to date and should be on the reference shelf of every psychologist. Its 263 illustrations are well chosen and the index and literature, so far as we have observed are well made.

*The Subconscious*, by JOSEPH JASTROW. Houghton, Mifflin & Co.  
Boston, 1906. pp. 549.

Professor Jastrow has performed a very useful service in bringing together the results of the recent very copious literature upon the unconscious and presenting it with many well chosen quotations in an interesting way which is at once scientific and popular. The book is timely, will be welcomed and read by every psychologist in the land, and probably will, as it certainly should, have a large sale among the rapidly growing class of laymen interested in the subjects it treats. He divides his chapters into three parts—normal, abnormal and theoretical. He first treats the function of consciousness, its relation to the nervous system and to volition and its mechanism and the distribution of attention, the subconscious in mental procedure and in maturing thought, lapses of consciousness, and finally self-consciousness itself. The second part seeks to define the range of the abnormal; discusses dream consciousness and its variants, dissociation, the genesis of altered personality and its disintegrating lapses. The third treats of the general concept of the subconscious, its abnormal forms, and draws conclusions.

It is impossible here to do justice to a work so lucid, comprehensive